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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,808	03/26/2004	Boris A. Maslov	76897-018CIP6	7953

61263 7590 12/28/2006  
PROSKAUER ROSE LLP  
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WASHINGTON, DC 20004

EXAMINER
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COLON SANTANA, EDUARDO

ART UNIT	PAPER NUMBER
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2837

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/809,808	Applicant(s) MASLOV ET AL.	
	Examiner Eduardo Colon Santana	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)                |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application      |
| Paper No(s)/Mail Date _____  | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> . |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/30/2006 has been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz et al. U.S. Patent No. 6,622,804 in view of Heidelberg et al. U.S. Patent No. 4,754,207 and further in view of Mongeau U.S. Patent No. 5,917,295.

Referring to claims 1 and 2, Schmitz et al. discloses a hybrid electric vehicle having two or more wheels and one or more electric motors and/or generators, but does not explicitly describe that the at least one motor and/or generator is an adaptive electric machine in which two or more electromagnetic power circuits are sufficiently

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isolated to substantially eliminate electromagnetic and electrical interference between the circuits. However, Heidelberg et al. discloses a rotary electric motor having an electromagnet with adjacent groups of electromagnets having different switching phases (see figure 1 and respective portions of the specifications). Heidelberg further discloses that the electric motor includes a stator (#6) and rotor (#4), wherein the stator comprises a plurality of stator core elements (#12) being arranged in groups (#22), being associated with a corresponding one of the phases of the electric motor (see Col. 2, lines 22-33). Additionally, Heidelberg et al. clearly describes each of the groups being structurally separated and having magnetic material magnetically isolated and separated from other groups (see figure 1 and Col. 2, lines 17-25). However, Heidelberg et al. does not explicitly describe the controller which is used to control electrical flow in each group being independently controllable of each other phase, thereby establishing relative rotation between rotor and stator. On the other hand, Mongeau disclose an improved motor drive system having a plurality of series connected H-bridges (see figures 1, 7 and respective portions of the specification), wherein each phase of the motor is controlled independently of each other and is believe to control the electric flow in one phase with a parameter different from that another phase.

Since Schmitz et al., Heidelberg et al. and Mongeau are in the same field of endeavor, the purpose disclosed by Heidelberg and

Mongeau would have been recognized in the pertinent art of Schmitz et al.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have each phase controlled independently of each others phase by a controller as taught by Mongeau within the teaching of Heidelberg et al. for the application of an electric vehicle for the purpose of reducing switching losses and to reconfigure each motor phase winding at various operating modes, optimizing the speed of the motor at different loads (dynamic selection) to increase efficiency.

Even though Schmitz, Heidelberg and Mongeau are silent on the torque-to-weight ratio (20 Nm/kg), this design parameter is an obvious implementation in the structure of the motors being used. It is well known in the art wherein motors are being used on vehicle propulsion systems that the torque-to-weight ratio differ from one motor to another in accordance with the speed, voltage and/or other variables require to operate at desire efficiency.

It would have been an obvious matter of design choice to one having ordinary skill in the art at the time the invention was made to claim a specific torque-to-weight and torque-to-volume ratio, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)

As to claims 3-5 and 8-10, Schmitz et al. discloses in figure 1, an internal combustion engine (ICE) 300 connected to an electric

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generator (310) arranged in a series hybrid configuration. It would have been obvious to also include a fuel cell arranged in a series hybrid configuration, since this is an additional source to produce electricity from external supplies of fuel and oxidant (i.e. Hydrogen as fuel and oxygen as oxidant).

Referring to claims 6, 7, 11 and 12, Schmitz et al. discloses a in figure 3, an electric motor 50 and 60, each having electromagnetic circuits (phases) being powered by its own power supply (battery array 30). In addition depicts an internal combustion engine (ICE) (300), a central controller (200) which controls the operation of the motors, battery and the ICE and has a master control panel and programmable logic controller with get the input from an onboard user interface (not mention) but obviously part of the design.

#### ***Response to Arguments***

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Colon Santana whose telephone number is (571) 272-2060. The examiner can normally be reached on Monday thru Thursday 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 X.37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Eduardo Colon Santana  
Examiner  
Art Unit 2837

ECS  
December 21, 2006



LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER